ENVIRONMENTAL PROTECTION AGENCY
40 CFR Parts 80, 85 and 86
[AMS-FRL-6463-7]
RIN 2060-AI23

Control of Air Pollution from New Motor Vehicles: Proposed Tier 2 Motor Vehicle Emissions Standards and Gasoline Sulfur Control Requirements

AGENCY: Environmental Protection Agency (EPA).

ACTION: Provision of Supplemental Information and Request for Comment.

SUMMARY: EPA published a Notice of Proposed Rulemaking (NPRM) on May 13, 1999, proposing a major program designed to significantly reduce the emissions from new passenger cars and light trucks, including pickup trucks, minivans, and sport-utility vehicles (the "Tier 2 program"). The proposed program combines requirements for cleaner vehicles and requirements for lower levels of sulfur in gasoline. A supplemental notice was published on June 30, 1999, clarifying the May 13, 1999, proposal in light of a May 14, 1999, ruling by a panel of the Court of Appeals for the District of Columbia regarding the recently promulgated national ambient air quality standards (NAAQS) for ozone and PM. Our supplemental notice also provided additional modeling information not included in the May 13, 1999, proposal regarding 1-hour ozone levels for areas where the 1-hour ozone standard currently applies.

In light of the uncertain status of the 8-hour ozone standard resulting from the Court of Appeals' ruling, EPA recently issued a Notice of Proposed Rulemaking on October 20, 1999, proposing to rescind our earlier findings that the 1-hour ozone standard is no longer applicable in certain areas that have attained the standard. Today's document explains how the October 20, 1999, reinstatement proposal relates to the May 13 proposal on vehicle and gasoline standards.

Today's document also provides additional 1-hour ozone modeling and monitoring information for areas that would be affected by the proposed action.

DATES:

Comments: We must receive your comments on this document by December 1, 1999.

ADDRESSES:

Comments: You may send written comments in paper form or by E-mail. Send paper copies of written comments (in duplicate if possible) on the information in this document to Public Docket No. A-97-10 at the following address: U.S. Environmental Protection Agency (EPA), Air Docket (6102), Room M-1500, 401 M Street, S.W., Washington, D.C. 20460. If possible, we also encourage you to send an electronic copy of your comments (in ASCII format) to the docket by e-mail to A-and-R-Docket@epa.gov or on a 3.5 inch diskette accompanying your paper copy. If you wish, you may send your comments by E-mail to the docket at the address listed above without the submission of a paper copy, but a paper copy will ensure the clarity of your comments.

Please also send a separate paper copy to the contact person listed below. If you send comments by E-mail alone, we ask that you send a copy of the E-mail message that contains the comments to the contact person listed below.

EPA's Air Docket is open from 8:00 a.m. to 5:30 p.m., Monday through Friday, except on government holidays. You can reach the Air Docket by telephone at (202) 260-7548 and by

facsimile at (202) 260-4400. We may charge a reasonable fee for copying docket materials, as provided in 40 CFR Part 2.

FOR FURTHER INFORMATION CONTACT: Carol Connell, U.S. EPA, National Vehicle and Fuels Emission Laboratory, 2000 Traverwood, Ann Arbor MI 48105; Telephone (734) 214-4349, FAX (734) 214-4816, E-mail connell.carol@epa.gov.

For information on ozone modeling for Beaumont-Port Arthur, Texas, contact Mick Cote, U.S. EPA, Fountain Place 12th Floor Suite 1200, 1445 Ross Avenue, Dallas TX 75202-2733; Telephone (214) 665-7219, E-mail cote.mick@epa.gov.

SUPPLEMENTARY INFORMATION:

I. Introduction and Review of Events Related To This Rulemaking

A. Tier 2 Proposal

On May 13, 1999, EPA published in the Federal Register our proposal to reduce emissions from light-duty vehicles (LDVs) and light-duty trucks (LDTs). 64 FR 26004. The proposal would also significantly reduce sulfur content in gasoline. The proposed program would phase in beginning in 2004. The program is projected to result in reductions of approximately 800,000 tons of nitrogen oxides (NOx) per year by 2007 and 1,200,000 tons by

2010. It would result in reductions of about 70 percent in emissions of NOx from LDVs and LDTs nationwide by 2020, compared to emissions in that year without the proposed program. In addition, the proposed program would reduce the contribution of vehicles to other serious health and environmental problems, including particulate matter, visibility problems, toxic air pollutants, acid rain, and nitrogen loading of estuaries.

We proposed the standards for LDVs and LDTs pursuant to our authority under section 202 of the Clean Air Act (CAA or the Act). In particular, section 202(i) of the Act provides specific procedures that we must follow to determine whether Tier 2 standards for LDVs and certain LDTs[1] are appropriate beginning in the 2004 model year. Specifically, we are required to first issue a study regarding "whether or not further reductions in emissions from light-duty vehicles and light-duty trucks should be required" (the "Tier 2 study"). This study "shall examine the need for further reductions in emissions in order to attain or maintain the national ambient air quality standards." It is also to consider (1) the availability of technology to meet more stringent vehicle emission standards, taking cost, lead time, safety, and energy impacts into consideration, and, (2) the need for, and cost effectiveness of, such standards, including consideration of alternative methods of attaining or maintaining the national ambient air quality standards. We must then submit the study as a Report to Congress. We submitted our Report to Congress on July 31, 1998.

[1] LDTs with a loaded vehicle weight less than or equal to 3750 pounds.

Following the Report to Congress, we are required to determine by rulemaking whether (1) there is a need for further reductions in emissions in order to attain or maintain the national air quality standards (NAAQS), taking into consideration the waiver provisions of section 209(b); (2) the technology for more stringent emission standards from LDVs and LDTs with a loaded vehicle weight less than or equal to 3750 pounds will be available; and (3) such standards are needed and cost-effective, taking into account alternatives. If we make affirmative determinations, then we are to promulgate new, more stringent motor vehicle standards ("Tier 2 standards"). We proposed affirmative responses to the three questions above and proposed new standards. We also proposed standards for larger light-duty trucks (up to 8500 pounds GVWR) under the general authority of Section 202(a)(1) and under Section 202(a)(3) of the Act, which requires that standards applicable to emissions of hydrocarbons, NOx, CO and PM from heavy-duty vehicles[2] reflect the greatest degree of emission reduction available for the model year to which such standards apply, giving appropriate consideration to cost, energy, and safety.

We proposed our gasoline sulfur controls pursuant to our authority under Section 211(c)(1) of the CAA. Under Section 211(c)(1), we may adopt a fuel control if at least one of the following two criteria is met: (1) the emission products of the fuel cause or contribute to air pollution which may reasonably be anticipated to endanger public health or welfare, or (2) the

[2] Vehicle classifications are discussed in the May 13, 1999 proposal on page 26031. LDTs that have gross vehicle weight ratings above 6000 pounds are considered heavy-duty vehicles under the Act. See section 202(b)(3). For regulatory purposes, we refer to these LDTs as "heavy light-duty trucks," made up of LDT3s and LDT4s. For reference, LDTs that have gross vehicle weight ratings below 6000 pounds are referred to as "light light-duty trucks," made up of LDT1s and LDT2s.

emission products of the fuel will significantly impair emissions control systems in general use or which would be in general use in a reasonable time were the fuel control to be adopted.

We proposed to control sulfur levels in gasoline based on both of these criteria. Under the first criterion, we believe that existing sulfur content in gasoline used in Tier 1 and LEV technology vehicles contributes to ozone pollution, air toxics, and PM at levels which can be reasonably expected to endanger public health or welfare. Under the second criterion, we believe that in the absence of gasoline sulfur control, sulfur in fuel that would be used in Tier 2 technology vehicles would significantly impair the emissions control systems expected to be used in such vehicles.

B. New Ozone and PM NAAQS

EPA promulgated new NAAQS for ozone and PM in 1997. 62 FR 38652 (July 18, 1997); 62 FR 38856 (July 18, 1997). We replaced the 1-hour 0.12 parts per million (ppm) ozone standard with an 8-hour standard at a level of 0.08 ppm. We also promulgated a regulation providing that the 1-hour ozone NAAQS would continue to apply until we determined that an area had attained the 1-hour standard. This provision was premised upon the existence of the 8-hour standard and the implementation scheme developed for that standard. On June 5, 1998, July 22, 1998, and June 9, 1999, we issued final rules for many areas finding that the 1-hour standard no longer applied in these areas because they had attained the 1-hour standard. In proposing the Tier 2 standards on May 13, 1999, we proposed our determination on the need for additional

emission reductions under section 202(i) after considering monitoring data and air quality model predictions related to the new NAAQS for ozone (the "8-hour ozone NAAQS"), the pre-existing ozone NAAQS (the "1-hour ozone NAAQS"), the pre-existing PM_{10} NAAQS, the revised PM_{10} NAAQS, and the new $PM_{2.5}$ NAAQS.

C. Court Panel Opinion on the NAAQS, Our Supplemental Notice Regarding Its Effect on the Tier 2/Sulfur Rule, and Our Proposal to Rescind Previous Findings on Applicability of the 1-Hour Ozone NAAQS

On May 14, 1999, a panel of the U.S. Court of Appeals for the District of Columbia Circuit found, by a 2-1 vote, that sections 108 and 109 of the Clean Air Act, as interpreted by EPA, represent unconstitutional delegations of Congressional power. American Trucking Ass'ns, Inc., et al., v. Environmental Protection Agency, Nos. 97-1440, 1441 (D.C. Cir. May 14, 1999). The Court remanded the record to EPA. The June 30, 1999 supplemental notice contained a summary of the Court's opinion. On June 28, 1999 we filed a petition for rehearing and a petition for rehearing *en banc* seeking review of the panel's decision.

In the May 13, 1999, NPRM and related documents we provided a significant amount of information and analysis regarding our proposed determinations that further emission reductions were needed to attain and maintain the NAAQS, that the technology for more stringent emission standards will be available, and that such standards are needed and cost effective, taking into account the alternatives. In the June 30, 1999, supplemental notice, we explained that, regardless

of the eventual outcome of the Court case, the proposed Tier 2 Rule is justified as a necessary and important measure for reducing air pollutants and protecting public health. We stated that the proposed regulations continue to conform to the statutory requirements of the Act for the 1-hour ozone standard and the pre-existing PM_{10} NAAQS. The June 30, 1999, supplemental notice explained that the statutory requirements for the proposal remain satisfied, for each of the elements of the proposed rule that are covered by different statutory requirements (the "Tier 2" standards for LDVs and LDTs weighing 3750 lbs. or less, the standards for vehicles above this weight, and the gasoline sulfur limits). In particular, the supplemental notice summarized information on 1-hour ozone and PM air quality that had been presented in the May 13, 1999 notice. The supplemental notice also presented and discussed additional information on our ozone and PM air quality modeling analyses, focusing on the 1-hour ozone and the pre-existing PM_{10} NAAQS.

The additional information on 1-hour ozone presented in the supplemental notice included a table (numbered as Table 2 in the supplemental notice) of metropolitan areas for which ozone modeling has indicated a need for additional emission reductions for 1-hour ozone attainment. This table showed the results of the "exceedance method"[3] for comparing ozone model predictions to the 1-hour standard. It listed 17 metropolitan areas which remained subject to the 1-hour standard as of June 30, 1999, and which based on ozone modeling we predicted

[3] The exceedance method is described in the June 30,1999, supplemental notice and associated documents in the docket for this rulemaking. It is the method we have used in developing the ROTR, to assess prospects for future 1-hour ozone problems in specific areas based on regional ozone modeling. The ROTR was published on October 21, 1998 (63 FR 56292).

would have 1-hour ozone levels in 2007 above the level of the 1-hour standard, even after implementation of the Regional Ozone Transport Rule (ROTR), the National Low Emission Vehicle Program, the 2004 highway diesel engine standards, the Phase II nonroad diesel engine standards, and other federal and SIP emission control measures required under the CAA.[4] We stated in the supplemental notice our belief that these results indicate that there are many geographically dispersed areas which need further ozone precursor emission reductions to meet the 1-hour ozone NAAQS. The 1990 population of these 17 metropolitan areas exceeded 70 million.[5]

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[4] The deadline for submission of state implementation plans under the ROTR was recently stayed by a panel of the Court of Appeals for the D.C. Circuit pending further review. EPA believes that the ROTR is fully consistent with the Clean Air Act and should be upheld. However, it should be noted that in the absence of the reductions mandated in the ROTR, the emission reductions from the Tier 2 program would be even more necessary for compliance with the NAAQS.

[5] One of the 17 areas discussed in the June 30, 1999, supplemental notice was the Los Angeles-Riverside-San Bernardino Consolidated Metropolitan Statistical Area (CMSA). Much of this area is within the South Coast Air Basin ozone nonattainment area. The supplemental notice explained that we consider the emission reduction needs of California's worst ozone nonattainment area to be relevant to our determination on the air quality need for emission reductions, even though the standards we proposed would only apply to vehicles and gasoline sold outside California. California has designed and implemented a state vehicle and fuel control program with vehicle standards and gasoline sulfur limits similar to those we proposed, and therefore the proposed Tier 2/gasoline sulfur program would likely not apply in California. However, in our proposal we noted in qualitative terms the importance of the Tier 2 and sulfur control reductions to California's efforts to reach attainment with the 1-hour ozone standard particularly in the South Coast Air Basin. Ozone levels in California would be reduced through reductions in emissions from vehicles sold outside California that subsequently enter California temporarily or permanently. According to California, about 7 to 10 percent of all car and light truck travel in California takes place in vehicles originally sold outside of California. Our vehicle standards will result in these vehicles being built with more effective emission controls. In addition, our gasoline sulfur standard will help ensure that cars which operate for a time outside of California and then within California will have fully functioning catalysts. With current gasoline sulfur levels, California vehicles which visit other states and non-California vehicles which visit or migrate to California would suffer catalyst poisoning that would persist

On October 20, 1999, EPA issued a proposal to rescind our previous findings that the 1-hour standard is no longer applicable in certain areas that had attained the 1-hour standard. This proposal is in response to the Court's ruling concerning the 8-hour ozone standard, since the existence of the 8-hour standard was one of the key factors underlying our finding that the 1-hour standard no longer applied in such areas. We further proposed to reinstate the former designations and classifications for such areas when the final notice is effective. The October 20, 1999 proposal contains a detailed list of the areas that would be affected, and a discussion of the effects of restoring the applicability of the 1-hour standard. The comment period for this proposal ends on December 1, 1999. We plan to take final action on the reinstatement prior to the final action on the Tier 2/Sulfur standards.

EPA believes that the information in the May 13 and June 30, 1999, documents, including the information in today's notice on areas already addressed in the June 30 notice, fully support the standards and determinations proposed in the May 13th NPRM. This applies whether one considers the information in the May 13, 1999, notice and the June 30, 1999, notice separately or taken together. The purpose of today's document is to provide additional

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even when operating on California's own low sulfur fuel. In fact, the state of California has recently filed an update to its State Implementation Plan for the South Coast Air Basin that expressly claims that the Tier 2 program will lead to four tons per day of reduced NOx. The four tons per day NOx reductions cited represents only a small fraction of the emission reductions needed in the South Coast to attain the NAAQS. Because of the information from California that these additional emission reductions from our proposed rule are needed for attainment in the South Coast Air Basin of California, the Los Angeles-Riverside-San Bernardino metro area was included in our list of areas with predicted exceedances in the absence of our proposed Tier 2/Sulfur standards, even though we have not modeled this area as we have the other areas listed in the table.

information focusing on those areas where we recently proposed to rescind our previous findings on the applicability of the 1-hour ozone standard. The information provided in this document on these areas lends additional support to the information and analyses previously provided by EPA in the two prior documents, for any area where EPA finalizes such proposed reinstatement. For such areas, it will be appropriate and necessary for us to consider the prospects for attainment and maintenance with the 1-hour standard when we make our final finding under section 202(i) regarding the need for further reductions in emissions in order to attain or maintain the NAAQS. While the determinations and standards proposed by EPA in May of 1999 would be appropriate even without this additional information, it provides even further evidence that the proposal is appropriate.

The additional information presented today consists of (1) additional information on areas already addressed in the June 30, 1999 supplemental notice, and (2) ozone model predictions for areas that were not covered by that document. The 1-hour ozone modeling information in the June 30, 1999, supplemental notice was restricted to only those areas in which the standard still applied. The ozone modeling that was summarized in the table in fact resulted in predictions of exceedances in 2007 in other areas as well, as presented in the next section of this document. Today's notice does not present any additional information regarding attainment or maintenance of the PM NAAQS.

II. Supplemental Information

A. Update of Information Presented in the June 30, 1999, Supplemental Notice

We have several items of information which update and further explain the ozone situation in the metropolitan areas that were listed in the June 30, 1999, supplemental notice.

First, the population figure given in the supplemental notice for the Los Angeles-Riverside-San Bernardino metropolitan area was in error. The correct figure for the 1990 population of this area is 14,531,529. Also, the Dover, DE Metropolitan Statistical Area (MSA) should have been listed separately from the Philadelphia-Wilmington-Atlantic City, PA-NJ-DE-MD Consolidated Metropolitan Statistical Area. These are in the same nonattainment area, but the Dover MSA is a separate metropolitan area. The two metropolitan areas each meet the criteria for inclusion in our list.

Also, we need to clarify the ozone model predictions and give additional information for three of the areas listed in the June 30, 1999 supplemental notice. In that document, we stated that for all the listed metropolitan areas our regional ozone model has predicted an exceedance of the 1-hour standard (with the exception of the Los Angeles area which was not within our regional ozone modeling domain). There was an error in reporting the modeling results for certain metropolitan areas. In fact, for the four episodes modeled, no 2007 exceedances were observed in the Baton Rouge, Beaumont-Port Arthur, or Milwaukee-Racine metropolitan areas. However, we still consider it appropriate to include two of these areas in the set of areas which

support our proposed determination that additional emission reductions are needed to attain and maintain the 1-hour ozone standard, for reasons given below.

- Baton Rouge, Louisiana. On July 2, 1999, we approved Louisiana's demonstration that Baton Rouge will attain the 1-hour standard by its November 15, 1999 deadline. 64 FR 35930-35941. Our regional modeling, presented in the May 13 and June 30, 1999, notices, in fact does not indicate any exceedances in 2007. We have no specific indication that Baton Rouge will be exceeding the 1-hour standard by 2004, the first year of the proposed Tier 2/Sulfur rule emission reductions. Therefore, we are removing Baton Rouge from the list of areas which we consider to support a determination that additional emission reductions are needed in order to attain and maintain the 1-hour ozone standard.

- Beaumont-Port Arthur, Texas. Beaumont-Port Arthur is a moderate ozone nonattainment area which failed to attain by its November 15, 1996 deadline. Presently, the state of Texas is seeking our approval for a demonstration that Beaumont-Port Arthur is impacted by ozone transport from the Houston area, in order to support a request that we extend its attainment deadline to 2007 which would be the same as the deadline for Houston. We proposed action on this request on April 16, 1999 (64 FR 18864) and extended the comment period on June 3, 1999 (64 FR 29822). While our own regional ozone modeling performed for the development of the ROTR did not show any 2007 exceedances in Beaumont-Port Arthur, we believe that the ozone episodes we used in our

regional modeling are not the most conducive to ozone formation in this particular area. The 2007 attainment analysis prepared and submitted by the state is based on two different episodes that are associated with high measured ozone levels in Beaumont-Port Arthur. We presently consider this analysis by Texas to indicate that additional emission reductions beyond already adopted programs are needed in order to provide for attainment of the 1-hour ozone standard in Beaumont-Port Arthur. Therefore, we are retaining Beaumont-Port Arthur on our list of areas with exceedances in the absence of the Tier 2/Sulfur emission reductions. Information on the modeling submitted by Texas may be examined by contacting Mick Cote in our Regional Office in Dallas, Texas and mentioning File No. TX-81-1-7350. Contact information for Mr. Cote is given in the section titled "FOR FURTHER INFORMATION CONTACT" at the beginning of this notice.

- Milwaukee-Racine, Wisconsin. Our regional ozone modeling did not indicate any 1-hour exceedance in any county within the boundaries of the Milwaukee-Racine CMSA itself. However, our modeling predicted days with 1-hour ozone levels above 0.124 ppm in locations within a larger Lake Michigan area modeling domain. Due to imprecision in the modeling of local wind fields over and around Lake Michigan, it is quite possible that the predicted ozone concentrations in these other locations are also representative of actual future concentrations in Milwaukee-Racine itself. Moreover, we consider that emissions in both Chicago and Milwaukee contribute to such violations. This does not affect our discussion of Chicago in the June 30, 1999, supplemental notice. We believe

that both areas should be considered to need additional reductions in emissions to reach attainment of the 1-hour ozone standard in the domain affected by emissions from both. We therefore are retaining Milwaukee-Racine on our list of areas with exceedances in 2007 in the absence of the Tier 2/Sulfur emission reductions.

Table 1 below is the same as the list of areas with predicted 1-hour exceedances given in the supplemental notice, except for the addition of Dover, DE, deletion of Baton Rouge and the correction of the population figure for Los Angeles.[6]

[6] Areas in Table 1 are grouped and identified by Consolidated Metropolitan Statistical Areas (CMSAs) where they exist, or by Metropolitan Statistical Areas (MSAs) where no CMSA applies. In some cases, we are grouping by MSA and CMSA groups counties or parts of counties differently than we and the states group them for purposes of nonattainment area boundaries, classifications, attainment deadlines, or SIP approval or disapproval actions. This is for simplicity of presentation in this document only.

Table 1. Metropolitan areas projected to experience exceedances of the 1-hour standard in 2007 or 2010, as applicable, with ROTR controls but without Tier 2/Sulfur Controls. Does not include areas for which the 1-Hour Ozone NAAQS does not presently apply.

Metropolitan Area	***1990 Population***
Atlanta, GA MSA	2,959,500
Beaumont-Port Arthur, TX MSA[a]	361,218
Birmingham, AL MSA	839,942
Chicago-Gary-Kenosha, IL-IN-WI CMSA	8,239,820
Cincinnati-Hamilton, OH-KY-IN CMSA[b]	1,817,569
Dallas-Fort Worth, TX CMSA[a]	4,037,282
Dover, DE MSA	110,993
Hartford, CT MSA	1,157,585
Houston-Galveston-Brazoria, TX CMSA[a]	3,731,029
Los Angeles-Riverside-San Bernardino CA CMSA[a,b]	14,531,529
Louisville, KY-IN MSA	949,012
Milwaukee-Racine, WI CMSA	1,607,183
New York-Northern New Jersey-Long Island, NY-NJ-CT-PA CMSA	19,549,649
Philadelphia-Wilmington-Atlantic City, PA-NJ-DE-MD CMSA	5,893,019
Springfield, MA MSA	587,884
St. Louis, MO-IL MSA	2,492,348
Washington-Baltimore, DC-MD-VA-WV CMSA[c]	6,726,395
Total Population	75,593,947
Number of Areas	17

[a] = These areas are not subject to the ROTR and were modeled accordingly.
[b]= The attainment date considered for Los Angeles-Riverside-San Bernardino is 2010. For other listed areas, 2007 is the date considered in the local ozone modeling that is the basis of this table. However, some of these areas have required attainment dates prior to 2007.
[c] = Washington, DC and Baltimore, MD are distinct nonattainment areas within one CMSA. They each meet the criteria for inclusion in this table.

Based on this list and the information presented in the first and supplemental notices regarding attainment of the pre-existing 1-hour ozone standard and the pre-existing PM_{10} NAAQS, we reiterate our proposed determination that there is a need for further reductions in emissions in order to attain or maintain the NAAQS, even when consideration is limited to the one-hour ozone and the pre-existing PM_{10} NAAQS. We believe the further information presented in the remainder of this document regarding other areas supports this proposed determination, but that the proposal is appropriate even without the additional information presented on areas subject to our proposed rescission of determinations regarding the applicability of the 1-hour ozone standard.

EPA has received comments on the air quality modeling aspects of the May 13, 1999, proposed rulemaking notice and the June 30, 1999, supplemental notice. All of these comments will be more fully considered and addressed in formulating and explaining the basis for our final action.

As discussed at length in the proposed rule, emissions from LDVs and LDTs will represent a large percentage of all emissions of ozone precursors once the ROTR is implemented. We believe that reductions from LDVs and LDTs in particular will be a needed and cost-effective alternative to achieve the necessary significant additional reductions in precursor emissions needed for the areas discussed above to attain or maintain the 1-hour ozone NAAQS.

B. Additional Ozone Modeling Results for Areas That Would Be Affected By the Proposed Recission

As stated above, we have proposed to rescind our findings that made the 1-hour standard inapplicable in many areas, and thereby restore its applicability in these areas. In light of our proposal, we are presenting in this document similar ozone modeling information as was presented in the June 30, 1999 supplemental notice for areas subject to the proposed reinstatement. This modeling information shows that if we finalize our proposed rescissions of previous findings, thus restoring the 1-hour standard's applicability nationwide, the air quality basis for the proposed vehicle and fuel standards will be even stronger because there are many additional areas which appear unable to attain or maintain the 1-hour standard without additional emission reductions.

In the ozone modeling used to develop the Regional Ozone Transport Rule (ROTR), EPA calculated hourly ozone levels for the year 2007 in all or parts of 37 eastern states. The ROTR modeling considered the effects of growth and emission control measures. One of the combinations of emission control measures analyzed consisted of the ROTR, the National Low Emission Vehicle Program, the 2004 highway diesel engine standards, the Phase II nonroad diesel engine standards, and other federal and SIP emission control measures required under the CAA. We consider these controls to be the baseline for the required finding regarding the need

for additional emission reductions to attain and maintain the NAAQS.[7] We performed ozone modeling for this baseline for each of the OTAG episodes in July 1988, 1991, 1993, and 1995.

Using the ozone predictions from the modeling just described, EPA extracted the predicted daily maximum 1-hour ozone concentrations for 2007 for a large number of counties in which ozone is or has been a concern. This set of counties includes (a) those counties that are or ever were designated as nonattainment for the 1-hour standard, (b) any additional counties which had an ozone monitor(s) in operation during the 1995-98 period with enough data to calculate a design value, and (c) any other counties in the same MSA or CMSA as counties included under the first two criteria. Using the county-specific predicted 2007 daily maximum values, we used the "exceedance method" to identify those metropolitan areas where ozone levels are predicted to exceed the 0.12 ppm 1-hour standard in 2007. We then divided these areas into two groups, based on whether recent air quality monitoring has also shown violations. The first group consists of areas with both predicted exceedances in 2007 and recent monitoring data indicating a design value higher than the 1-hour standard. The second group consists of areas with predicted exceedances in 2007 but no recent monitored violations. Tables 2 and 3 below list these groups.[8]

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[7] Comments have been received recommending that we investigate whether states have adopted additional local controls not reflected in the ROTR modeling. We will consider and respond to this comment in the final action.

[8] A predicted ozone level of 0.125 was considered to be an exceedance of the 1-hour NAAQS. Counties in Tables 2 and 3 are grouped and identified by Consolidated Metropolitan Statistical Areas (CMSAs) where they exist, or by Metropolitan Statistical Areas (MSAs) where no CMSA applies. Within a CMSA or MSA, the county of a predicted exceedance in 2007 was not required to match the county which has experienced a recent monitored violation, in order to qualify an area for listing in the first group. In some cases, grouping by MSA and CMSA groups counties or parts of counties differently than we and the states group them for purposes of

Table 2 - Areas with recent ozone violations - Of the proposed rescission areas that are predicted by regional ozone modeling to have 1-hour exceedances in 2007, monitoring data from 14 areas indicates a violation of the 1-hour standard in either or both of the 1995-97 period or the 1996-98 period (the two most recent periods for which monitoring data have been fully checked for accuracy and validity). These areas also all have one or more predicted exceedances of the 1-hour standard (in the ROTR modeling or in local modeling).[9] Table 2 lists these 14 proposed rescission areas; the 17 areas already listed in Table 1 are repeated in Table 2 to give a complete list of all areas with both predicted 2007 exceedances and recent design values in excess of the 1-hour standard. The combination of these two criteria is consistent with the criteria we used in developing the ROTR, for the purpose of identifying adverse impacts on 1-hour ozone attainment in receptor states due to interstate transport.

Based on their recent monitored design values, all 31 areas clearly need further emission reductions from current emission levels in order to attain the 1-hour standard. Some of the necessary emission reductions will come from already adopted or mandated measures. However, based on the ozone model predictions, in combination with the recent monitored violations, we believe that additional emission reductions, as would be provided by the Tier 2/Sulfur standards,

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nonattainment area boundaries, classifications, attainment deadlines, or SIP approval or disapproval actions. This is for simplicity of presentation in this document only.

[9] Of the areas that would have the 1-hour standard restored by our proposed rescission action, one area had a design value above the standard in both 1995-97 and 1996-98. Six areas had monitored design values which exceeded the 1-hour standard in 1995-97 but not in 1996-98, and six areas had the reverse. We placed areas on Table 2 or Table 3 based on the period that gave the higher design value.

will be needed for attainment of the standard in 2007 (2010 for Los Angeles). It should be noted that some of these areas have attainment dates prior to 2007. For the areas with an earlier attainment date, we expect total emissions will be higher in that earlier year than estimated for 2007 in this modeling. If we had performed regional ozone modeling for these higher emissions in earlier years, we would likely be predicting even higher ozone levels and more frequent and widespread exceedances.

We believe that the prospect of unresolved nonattainment problems in the additional 14 areas that appear in Table 2 provides further support for a finding that additional emission reductions are needed for attainment and maintenance, assuming that we re-apply the 1-hour standard at a minimum to the additional 14 areas. The total 1990 population of the 31 areas in Table 2 is over 90 million, compared to the population of about 75 million in the areas in Table 1. Correspondingly, these areas represent an even larger share of the vehicle and fuel market. Also, the broader geographic spread of these areas further supports the appropriateness of a national vehicle and fuel strategy.

Table 2. Metropolitan areas with recent design values above the 1-hour ozone NAAQS and also projected to experience exceedances of the 1-hour standard in 2007 (2010 for Los Angeles) with ROTR controls but without Tier 2/Sulfur controls.

Metropolitan Area	***1990 Population***
Atlanta, GA MSA	2,959,500
Barnstable-Yarmouth, MA MSA[b]	134,954
Beaumont-Port Arthur, TX MSA[a]	361,218
Birmingham, AL MSA	839,942
Boston-Worcester-Lawrence, MA-NH-ME-CT CMSA[b]	5,455,403
Charlotte-Gastonia-Rock Hill, NC-SC MSA[b]	1,162,140
Chattanooga, TN-GA MSA[b]	424,347
Cincinnati-Hamilton, OH-KY-IN CMSA	1,817,569
Chicago-Gary-Kenosha, IL-IN-WI CMSA	8,239,820
Dallas-Fort Worth, TX CMSA[a]	4,037,282
Dover, DE MSA	110,993
Grand Rapids-Muskegon-Holland, MI MSA[b]	937,891
Hartford, CT MSA	1,157,585
Houma, LA MSA[b]	182,842
Houston-Galveston-Brazoria, TX CMSA[a]	3,731,029
Huntington-Ashland, WV-KY-OH MSA[b]	312,529
Indianapolis, IN MSA[b]	1,380,491
Knoxville, TN MSA[b]	585,960
Los Angeles-Riverside-San Bernardino CA CMSA[a]	14,531,529
Louisville, KY-IN MSA	949,012
Memphis, TN-AR-MS MSA[b]	1,007,356
Milwaukee-Racine, WI CMSA	1,607,183
Nashville, TN MSA[b]	985,026
New York-Northern New Jersey-Long Island, NY-NJ-CT-PA CMSA	19,549,649
Philadelphia-Wilmington-Atlantic City, PA-NJ-DE-MD CMSA	5,893,019
Portland, ME MSA[b]	221,095
Providence-Fall River-Warwick, RI-MA MSA[b]	1,134,350
Richmond-Petersburg, VA MSA[b]	865,640
Springfield, MA MSA MSA	587,884

St. Louis, MO-IL MSA	2,492,348
Washington-Baltimore, DC-MD-VA-WV CMSA[c]	6,726,395
Total Population	90,383,971
Number of Areas	31

[a] = These areas are not subject to the ROTR and were modeled accordingly.
[b] = EPA has proposed to re-apply the 1-hour ozone NAAQS.
[C] = Washington, DC and Baltimore, MD are distinct nonattainment areas within one CMSA. They each meet the criteria for inclusion in this table.

Table 3 - Areas without recent ozone violations - Areas that have not recently experienced an ozone violation may nevertheless need further emission reductions in order to maintain their compliance with the 1-hour standard. In order to identify a set of areas that may need additional reductions to maintain the 1-hour standard, we have listed in Table 3 the areas for which our regional ozone modeling predicts at least one ozone exceedance day for 2007 but which had design values below the 1-hour NAAQS in both 1995-97 and 1996-1998. The proposal of October 20, 1999 proposed to restore the applicability of the 1-hour standard to these areas. Table 3 also indicates the closest that each area came to having a monitored design value above the standard in the 1995-98 period, by grouping the areas into bands of 95-100 percent of the NAAQS, 90-94 percent, etc. Preliminary 1999 data indicate that if the 1997-99 period is considered, some of these areas may have 1-hour design values above the NAAQS. Details on the monitored design values and 2007 exceedance predictions from the regional ozone modeling are given in a memo to Air Docket A-97-10, titled "Recent Design Values for Counties Predicted by Regional Ozone Modeling to Have 1-Hour Ozone Exceedances in 2007 Without Tier 2/Sulfur Control."

Table 3. Metropolitan areas with recent design values below the 1-hour ozone NAAQS, but projected to experience exceedances of the 1-hour standard in 2007 with ROTR controls but without Tier 2/Sulfur controls.

Metropolitan Area	***1990 Population***
RECENT DESIGN VALUE BETWEEN 95 AND 100 PERCENT OF NAAQS [a]	
Augusta-Aiken, GA-SC MSA	415,220
Cleveland-Akron, OH CMSA	2,859,644
Greensboro-Winston Salem-High Point, NC MSA	1,050,304
Greenville-Spartanburg-Anderson, SC MSA	830,539
Montgomery, AL MSA	292,517
New Orleans, LA MSA [b]	1,285,262
Raleigh-Durham-Chapel Hill, NC MSA	858,485
Reading, PA MSA	336,523
Tulsa, OK MSA [b]	708,954
9 Areas Population Subtotal	8,637,448
RECENT DESIGN VALUE BETWEEN 90 AND 94 PERCENT OF NAAQS [a]	
Allentown-Bethlehem-Easton, PA MSA	595,081
Biloxi-Gulfport-Pascagoula, MS MSA [b]	312,368
Columbia, SC MSA	453,932
Columbus, OH MSA	1,345,450
Detroit-Ann Arbor-Flint, MI CMSA	5,187,171
Harrisburg-Lebanon-Carlisle, PA MSA	587,986
Johnson City-Kingsport-Bristol, TN-VA MSA	436,047
Mobile, AL MSA	476,923
Orlando, FL MSA [b]	1,224,844
Pensacola, FL MSA [b]	344,406
10 Areas Population Subtotal	10,964,208

RECENT DESIGN VALUE BETWEEN 85 AND 89 PERCENT OF NAAQS [a]	
Charleston, WV MSA	250,545
Columbus, GA-AL MSA	260,862
Fayetteville, NC MSA	274,713
Hickory-Morganton-Lenoir, NC MSA	292,405
Lafayette, LA MSA [b]	345,053
Norfolk-Virginia Beach-Newport News, VA-NC MSA	1,444,710
York, PA MSA	339,574
7 Areas Population Subtotal	3,207,862
RECENT DESIGN VALUE BELOW 85 PERCENT OF NAAQS [a]	
Jackson, MS MSA [b]	395,396
1 Area Population Subtotal	395,396
Total Population	23,204,914
Number of Areas	27

[a] = Each area is assigned to one of these groups based on the higher of its 1995-97 or 1996-98 design value

[b] = These areas are not subject to the ROTR and were modeled accordingly.

EPA believes that the ozone model's predictions of exceedances in the areas listed in Table 3 are information that is relevant to the determination we will make regarding the need for further emission reductions to attain or maintain the NAAQS, provided that the 1-hour standard is restored for these areas. Therefore we are presenting this information for public comment. In the development of the ROTR, we did not rely on presently clean areas such as these as receptor areas for determining whether emissions in upwind states will contribute to nonattainment in downwind states. However, at the time, the 1-hour standard did not apply to such areas so there was a legal as well as an air quality basis for not considering these areas. We invite comment on whether and how we should consider the areas listed in Table 3 for purposes of our section 202(i) determination on the need for additional emission reductions.

EPA has been updating its regional ozone modeling estimates and methods, in part in response to comments on our NPRM and the first supplemental notice. We are currently in the process of updating the docket to include documents that describe this additional ozone modeling. We intend to consider this modeling in taking final action on our May 13 proposal. Anyone who is interested in this updated modeling should review the docket for further information.

III. Public Comment

We seek comments on all aspects of this Supplemental Notice, including the continuing need for Tier 2 emission standards for vehicles and reducing sulfur in gasoline to attain and maintain the NAAQS. Please see the Addresses section in this document for how and where to send any comments you may have on the supplemental information provided in today's document.

Dated: October 20, 1999.

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Carol M. Browner,

Administrator.